

Amendments to the Specification:

Please replace the paragraph on page 14, lines 3-17 with the following paragraph:

An operating system runs on processor 102 and is used to coordinate and provide control of various components within data processing system 100 in **Figure 1**. The operating system may be a commercially available operating system such as Windows® XP, which is available from Microsoft Corporation. An object oriented programming system such as [[Java]] a JAVA™ programming system may run in conjunction with the operating system and provides calls to the operating system from [[Java]] JAVA™ programs or applications executing on client 100. “JAVA” is a trademark of Sun Microsystems, Inc. Instructions for the operating system, the object-oriented programming system, and applications or programs are located on storage devices, such as hard disk drive 126, and may be loaded into main memory 104 for execution by processor 102.

Please replace the paragraph extending from page 47, line 16 to page 48, line 28 with the following paragraph:

The mechanism of the present invention provides for the construction and maintenance of call flow trees that may be accessed by an executing program for use in dynamic data area coverage. When a request is made for an allocation of data, such as a malloc, a routine is called to build trees. One methodology for determining the call stack is to walk the stack to determine the calling sequence at the time of the malloc. Another methodology it to use the hardware information generated through setting data access indicators. Techniques similar to that described in United States patent application entitled “Method and Apparatus for Determining Computer Program Flows Autonomically Using Hardware Assisted Thread Stack Tracking and Cataloged Symbolic Data”, serial number [[_____]] 10/803,663, attorney docket no. AUS920030548US1 filed on [[_____]] March 18, 2004, which is incorporated herein by reference. This technique is used to identify the calling sequence; hereafter called call stack. This tree is maintained in memory and may be accessed through calls such as application programming interface (API) calls to a device driver which reads the call stack information for the current thread. The process for maintaining the hardware thread maintained call stack and to convert the addresses to symbolic names also is described in United States patent application entitled “Method and Apparatus for Determining Computer Program Flows Autonomically Using Hardware Assisted Thread Stack Tracking and Cataloged Symbolic Data”, serial number[[_____]] 10/803,663, attorney docket no. AUS920030548US1 filed on [[_____]] March 18, 2004. The call stack retrieved from

the device driver is sent to the arcflow program, which walks the stack into its thread oriented trees. This process is described in United States patent application, entitled "Method and System for Merging Event-Based Data and Sampled Data Into Postprocessed Trace Output", serial number 09/343,438, attorney docket no. AT9-98-850, filed on June 30, 1999. One approach involves indicating the start area, the end area, and one byte beyond the end area for flagging. Further, other statistics may also be kept in this memory area. Examples of other statistics involved using other hardware assist capabilities, the number of accesses, cache misses, cycles, etc. may be maintained.